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ABSTRACT

This paper reports on the development of the Youth Bends Easily Instrument designed to assess children's attitudes toward human differences. The instrument was commissioned by the Madison Public Schools (Wisconsin) to evaluate the Individual Differences program designed to help primary grade children deal with racial, physical, and social differences and their perceptions of them. An instrument was developed that relied on pictures and oral language. Children were presented with pictures of groups of children. Figures were drawn so that six basic dimensions for discrimination resulted: size, dress, sex, physical disability, ethnic grouping, learning ability. Associated with each picture was a stimulus question requiring a response by the children (e.g. Which children are Americans?) Results are tabled and discussed for kindergarten, first, and second grades involved in the program. Checks for reliability and validity are described. Results support the possibility of measuring the effect of a public school program of individual differences using the individual differences instrument. Effectiveness of the program is briefly discussed. (Author/SB)

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THE DEVELOPMENT OF AN INSTRUMENT FOR ASSESSING YOUNG CHILDREN'S PERCEPTIONS OF INDIVIDUAL DIFFERENCES

by

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BACKGROUND

> "Social institutions are the great conservers and transmitters of the cultural heritage. The school is one of the most important institutions engaged in preserving and passing on knowledge, skills, and techniques of society. Therefore, it seems reasonable to develop instruments that can assess the...attitudes of...students so that our 'cultural transmitter', the school can respond... Inasmuch as one role of the American school is to assist people in living in democratic society, the schools must respond by designing programs that may assist different...groups in living and working together harmoniously with mutual respect."
>
> Sampf and Sayles (1974, p. 5)

It is often suggested that children at any given age possess a greater degree of knowledge than children at the same age in previous generations. In considering knowledge of current events, Ojemann (1970) indicates this, in fact, appears to be the case. However, as he cogently points out:

> "...it is evident also that in areas that are of increasing importance for living now and in the future, the youth of today have not gained beyond previous generations. For example, most persons agree that in the present world, and in the future, an understanding of people and why they do what they do is of increasing importance. Nevertheless, there has been little progress in this area.... The children coming from our schools, or their parents before them, are trying to live in a world of people without having acquired an elementary understanding of the factors operating in human behavior. There is evidence that understanding can be increased significantly by planned

> programs at the elementary and secondary levels.... Nevertheless, an examination of a representative sample of curriculum at both the elementary and secondary levels...and an examination of pupils indicate little growth in this area."

Educators who attempt to develop in childre. an understanding of human behavior stress the importance of early childhood attitudinal formation. Many theorists, including Allport (1954) have taken the position that the first five years of life are most important for the intellectual and social development of the child. The kinds of experiences young children experience can either facilitate or retard their development. The necessity then for educational intervention at the pre-school and early elementary levels becomes apparent.

The effects of prejudicial attitudes and stereotypic thinking on social relationships have been extensively researched. In studying classroom experiences of 250 kindergarten and primary children, Trager and Yarrow (1957) reported that selected experiences can alter children's attitudes in a positive direction. Trager, and Davis (1949) indicated children showed considerable interest in and concern for cultural differences. These authors also concluded that "if the personal-social needs of children in our culture are to be met, their awareness, interests and fears related to group factors must be dealt with. This cannot be postponed until adolescence, but must be begun in early school years."

Sampf and Sayles (1974) point out that very little research has been conducted involving assessment of attitudes relating to individual

differences among young children. A majority of this research is concerned only with black-white or racial differences. In assessing ethnic attitudes of kindergarten-age children, Horowitz (1936) used pictorial materials in which the child was asked to indicate a preferred playmate. Horowitz, in this classic study, found that the white kindergarten boys demonstrated a preference for pictures of other white children. Goodman (1964) and Clark and Clark (1955) reported similar results. Sampf and Sayles (1974) attempted to develop an instrument to assess attitudes toward race among elementary school children. Unfortunately, the instrument lacked the stability necessary for reliable research. One of the problems encountered by Sampf and Sayles (1974) involved the presentation of too much stimuli. They noted that, "Pictures were used in this instrument and might have become an uncontrolled variable inasmuch as long hair, glasses, or a frown or smile might have influenced response", (p.47). Campbell (1950, pp. 31-32), in reviewing Horowitz's (1936) study, stressed the importance of response consistencies when using visual presentations.

Other assessments have emphasized play materials such as dolls (Radke and Trager, 1950) or cardboard cutouts (Trager and Yarrow, 1952). For these tasks, the child expresses his (prevalent) ethnic attitudes in the way(s) he manipulates the materials. Kutner (1958) utilizes a structured interview approach where the child responds to questions involving other ethnic groups. The subjective nature for scoring these tasks appears to limit the generalizability of such tests.

A rather exciting approach to the problem of assessing individual differences is an application of the semantic differential technique. This instrument was developed by Osgood, Suci and Tannenbaum (1957). It attempts to define the "semantic space" or meaning of a particular concept to the respondent with some success being claimed in measuring children's attitudes. The majority of instrument development has been performed on populations of adults from divergent backgrounds and/or cultures, however.

One of the most successful studies performed using kindergarten children was conducted by Hahn and Schwartz (1971). The purpose of the study was "to provide a basis for appropriate educational intervention in the development of young children's attitudes". This goal was accomplished by meeting two basic objectives as stated by Hahn and Schwartz (1971):

> "1. The development of a measurement technique for the assessment of young children's attitude toward others, and
>
> 2. The construction of curriculum approaches which will facilitate the accurate formation of attitudes toward other people." (p. 7)

The treatment conditions were role playing and Piaget training. A control group was also established. In the study, students were asked to choose among pictures of black and white people and to apply a positive or negative objective to the picture. The instrument proved to be highly reliable. Validity was ascertained using behavioral episodes. Results revealed students in both experimental groups possessed high positive preferences for white and black subjects. Pro-white biases

were also significantly decreased. The results, in part, indicated it was possible to facilitate and measure young children's attitude growth utilizing a planned curriculum.

INSTRUMENT DEVELOPMENT

The genesis of the research reported in this paper was a request made of the Research and Development Department by the staff of the Human Relations Department (both departments being part of the Madison Public Schools). A program had been inaugurated somewhat earlier by Human Relations Coordinator, Marlene Cummings, and a community of parents and teachers to help primary grade children deal with the human differences and their perceptions of them. This program is extensively described in a document by Cummings, London, Rasche, Schwartz, and Toftey (1974). It was a need to assess the impact of that program which led to the involvement of the Research and Development Department and the project reported in this paper. The need was to determine if children's negative reactions to human differences were being positively changed by the program. As the scenario developed the need became one of determining if the way children view differences and their reaction to them could be realiably assessed in an operational setting.

Because most primary age children are, for all practical purposes functionally illiterate, the usual paper and pencil instruments for assessing attitudes were not appropriate. Instead these investigators developed an instrument that relied on pictures and oral language. It was entitled, "Youth Bends Easily". A series of pictures of children

was developed.[1] Each child in each picture differed from the others in one or more observable characteristics: skin color, sex, physical features, handicaps, and dress. Associated with each of the pictures would be a stimulus question that would require a response by the children. An example question is depicted in Figure 1, where the student is asked to circle all chidlren who are American. In this picture, the student is asked to discriminate between skin color, sex, physical features, handicaps, and dress. It was decided too many stimuli were presented and, in revising this picture, the number of competing stimuli was limited.

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1. Our appreciation to Professor Gerald Gleason for arranging the art work.

Figure 1

An Example of Pictures Presented
In Response To A Question Asked
(Youth Bends Easily Instrument)

Question Asked: Which children are Americans?

In summary, the "Youth Bends Easily" instrument, although technically acceptable, was conceptually inadequate, as our first data demonstrated. On the basis of the results, some of the pictures were discarded and others were extensively re-done.

In modifying the pictures for the "Youth Bends Easily" instrument, special attention was paid to limiting the number of competing stimuli. [This decision was influenced in part by the knowledge of similar problems experienced by Campbell (1950, pp. 31-32) which have been discussed in the first part of the paper.] After a fairly rigorous review and testing process, thirty new figures were selected. These figures were drawn so that six basic dimensions for discrimination resulted. The six dimensions were selected using previously recorded information from both students and teachers who had been evaluated in previous assessments. These dimensions and their corresponding discriminating attributes are presented in Table 1.0.

For purposes of explanation, let us consider a simple example in which we wish to discriminate according to sex. One way of accomplishing this would be to present two identical figures except for the sex variable. For example, we could present two figures: a tall, "raggedly" dressed, blind boy and girl. The student who selected only the girl would be thought to be discriminating according to the dimension of sex.

In a similar manner, six unique groupings of figures were formed. It was anticipated that the most important discriminating dimensions would be ethnic grouping, physical disabilities, and mental learning

abilities. Each of the groupings used a unique set of figures and varied, to differing degrees, the dimensions of discrimination. One of the six groupings is paired with each of the 18 questions asked in the instrument administration. All groupings are paired with at least one question. An example from the instrument is given in Figure 2 where all dimensions except the ethnic grouping factor are held constant.

TABLE 1.0

Dimensions of Discrimination and
Their Corresponding Attributes
Represented In The Individual Differences Instrument

Dimensions	Discriminating Attributes
Size	tall, short, fat, thin
Dress	mod, ordinary, "hippie", "raggedy"
Sex	male, female
Physical Disability	amputee/brace, hearing, blindness, eyeglasses
Ethnic Grouping	Black, Asian, White, Indian
Learning Ability	retarded, "so-called" normal

In administering the instrument, each student is given a pencil and a booklet containing on each page groupings of figures representing "real-life" children. The student is told that (s)he will be shown 18 color slides of figures which correspond to the 18 pages in the booklets. For each page and slide presented, the student will be asked a question relating to the figure group presented. A list of the 18 questions asked the student and corresponding item numbers for the instrument are depicted

in Table 2.0. The student is then asked to circle as many or as few figures of children as he or she wishes. The student's awareness of individual differences is seen as directly related to the number of figures he or she circles. If a student circles all figures, (s)he receives the highest possible score of 110.

The packets for each student are hand scored and item responses coded onto work-sense answer sheets. These answer sheets are then processed, with results tabulated according to varying dimensions by a specially prepared computer program (see Albrecht and Roecks, 1974).

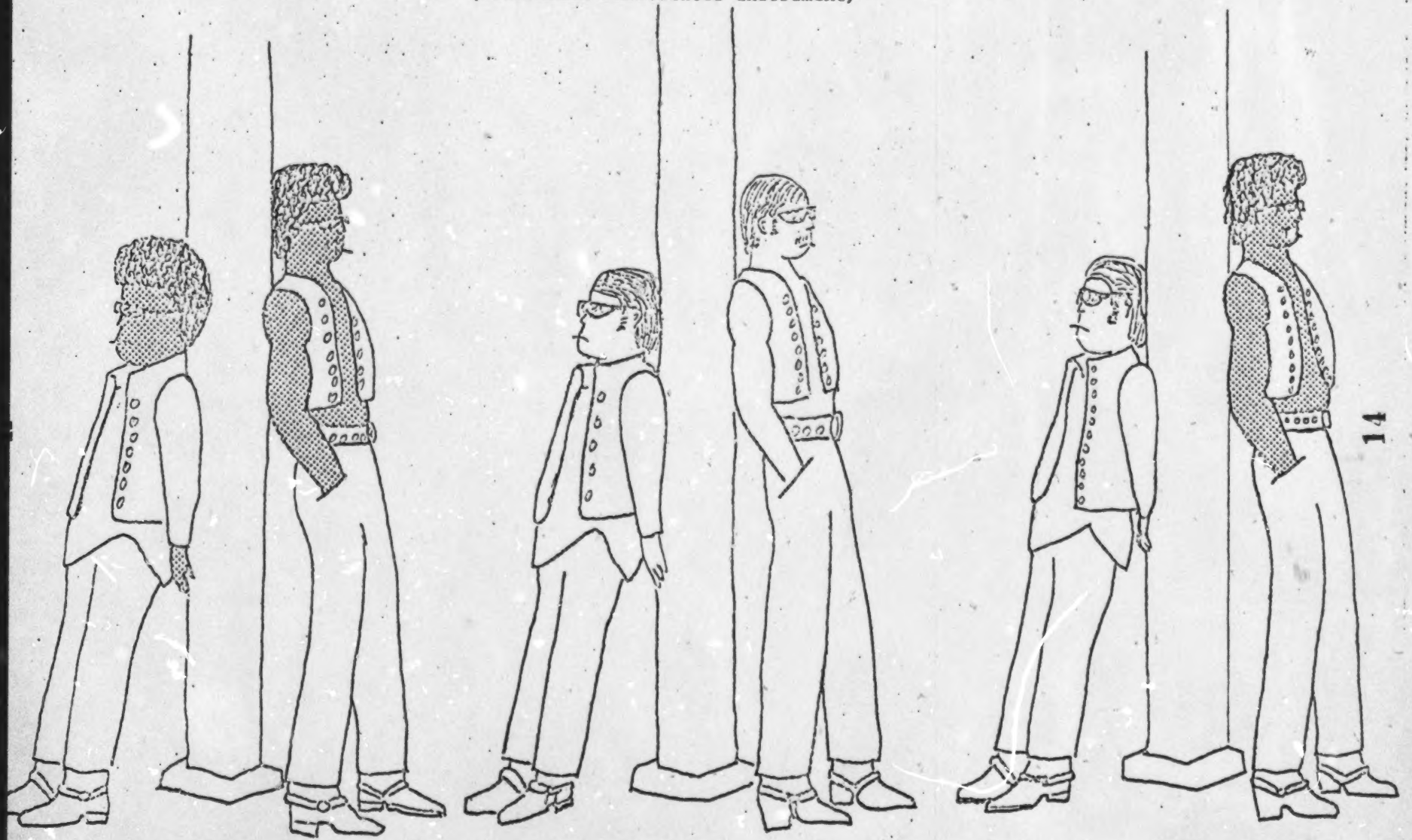
TABLE 2.0

Questions Asked Each Student When Administering
The Individual Differences Instrument

Item Number		
1-10	1.	Circle all the American children.
11-13	2.	These three groups of children are playing a game. Each group needs an extra player. Which group will you play with?
14-18	3.	Circle all the children you would like to have in your classroom.
19-23	4.	Circle all the children you would like to have in your classroom.
24-33	5.	Circle the children you would like to have in your neighborhood.
34-38	6.	Circle all the children you want to play with during recess.
39-43	7.	Circle all the children you want to play with during recess.
44-49	8.	Circle all the children you would like to have in your classroom.
50-59	9.	Circle all the children you would share your lunch with.
60-64	10.	If you were given permission to have a party, which of these children would you invite? Circle all the children you want to invite.
65-74	11.	You are eating lunch at a table with all of these children and find you are still hungry. Which of these children would you accept food from if they offered it to you.
75-80	12.	Circle all the children you want to play with during recess.
81-85	13.	If you were given permission to have a party, which of these children would you invite? Circle all the children you want to invite.
86-90	14.	Circle the children you would like to invite to your house to spend the night.
91-96	15.	If you were given permission to have a party, which of these children would you invite? Circle all the children you want to invite.
97-101	16.	Circle the children you would like to invite to your house to spend the night.
102-107	17.	Circle the children you would like to invite to your house to spend the night.
108-110	18.	You have lost your way home and it is getting dark out. You see these three groups of boys standing on three different corners. Which group would you ask to help you?

Figure 2

An Example of Pictures Presented in Response to a Question Asked
(Individual Differences Instrument)



Question Asked: You have lost your way home and it is getting dark out. You see these three groups of boys standing on three different corners. Which group will you ask to help you?

RESULTS OF 1974-75 ASSESSMENT

During the 1974-75 school year teachers at the kindergarten, first, and second grade levels voluntarily participated in the Individual Differences program. Pre- and post-assessments were made using the Individual Differences Instrument. The pre-testing was done during the first month (September) and the post-testing during the last month (May) of the school year. Five teachers who were not involved in the program but whose classes were similar in composition to other classes at the same grade level were given the post-test. All research presented was conducted within the Madison Public Schools.

TABLE 3.0

Mean and Standard Deviation Values on Individual Differences Test for Students Whose Teachers Were (Not) Involved in the Program (Kindergarten, 1974-75 Academic Year)

Kindergarten	Number Students	Number Classes	Pre-Testing Mean	Pre-Testing S.D.	Post-Testing Mean	Post-Testing S.D.
Teacher Involvement	160	7	67.9	22.3	54.0	14.3
New Teacher Involvement	20	11			40.4	11.7

Kindergarten

Table 3.0 presents the results of the pre- and post-assessments for kindergarten students. A total of 160 students in six classes were taught by teachers who were involved in the program for the first time.

The mean value on the pre-test, 67.9, was greater than the mean value for the post-test, 54.0. The test scores on the pre-testing showed more variability than for the post-testing, with standard deviations of 22.3 and 14.3 being recorded. The mean score on the post-test for the class that was not involved in the program was 40.4.

First Grade

Before presenting the first grade findings, the reader should be made aware of the slightly different background of the first grade teachers. In contrast to the kindergarten and second grade teachers, some of these first grade teachers had previously been involved in the program. Students in this first grade group had not previously been involved in the study.

TABLE 4.0

Mean and Standard Deviation Values On the Individual Differences Test for Students Whose Teachers Had (Not) Previously Been Involved in the Program (Grade 1, 1974-75 Academic Year)

Grade 1	Number Students	Number Classes	Pre-Testing Mean	Pre-Testing S.D.	Post-Testing Mean	Post-Testing S.D.
Teachers Involved for the 1st time	306	13	53.7	16.1	59.8	17.1
Teachers Involved Previously	359	18	54.2	16.8	72.0	18.6
Teachers Not Involved	20	1			35.0	14.1

Given in Table 4.0 are the results for the first grade assessments on a pre-post basis. There were 13 teachers who were involved for the first time and 18 teachers who had been involved in the program in previous years. The post-test means (53.7 and 54.2) and standard deviation (16.1 and 16.8) for these two groups were quite similar. The post-test means and standard deviations, however, exhibit larger differences. The mean and standard deviation values for students whose teachers were involved in the project for the first time were 59.8 and 17.1 respectively. Values of 72.0 and 13.6 were recorded for the mean and standard deviation of those students who were taught by teachers who had previously been involved in the program. A mean of 35.0 on the post-assessment was noted for the class whose teacher was not involved in the program.

TABLE 5.0

Mean and Standard Deviation Values On The Individual Differences Test for Students Who Had (Not) Previously Been Involved In The Program (Grade 2, 1974-75 Academic Year)

Grade 2	Number Students	Number Classes	Pre-Testing Mean	Pre-Testing S.D.	Post-Testing Mean	Post-Testing S.D.
Students Involved Previously In Program	156	7	62.4	20.9	73.2	22.4
Students Who Were Involved For the First Time	25	3	49.5	14.4*	50.8	12.1
Students Who Were Not Involved	64	3			45.6	14.7

*Variability figures were not available for two of the classes. The value presented represents the S.D. from the remaining class.

Second Grade

Table 5.0 depicts the results of the assessment at the second grade level. As mentioned earlier, the teachers used in this study had not previously been involved in the individual differences program. Some of the students, however, had participated previously in the program. These students, 156 in number, were in seven classes. The mean score for the pre-testing (62.4) was lower than that for the post-testing (23.2). The mean scores on pre- and post-testing for the class of students who had not participated previously in the program was 49.5 and 50.8 respectively. A mean score of 45.6 was recorded on the post-assessment for the 64 students in three classes who did not participate in the study. It should be noted that the standard deviations on the post-testings for the students involved for the first time (12.1) and for those students not involved at all (14.7) are much lower than for the group of students who had previously been involved in the program (22.4).

Reliability

An item analysis was performed on the student results and the measure of internal consistency ranged from .90 to .95, depending on the group being considered. This high reliability may, in fact, be due to the large number of items in the test. However, analyses performed on selected subtests indicate the measure of internal consistency to be between .70 and .75. These subtests consisted of 15 to 30 items. From these findings, it then appears the instrument is fairly reliable.

Validity

A factor analysis-using the common in contrast to principal component approach was applied to the data. Responses for slightly over 1100 students were analyzed. The purpose of the factor analysis was to confirm the intuition that the dimensions of ethnic grouping and physical disability, and learning ability are perceived by the students as most important variables. If that intuition is confirmed, at least some degree of content validity can be claimed. The results of the factor analyses revealed four factors which accounted for about 40 percent of the total variability. Each factor accounted for between 8 and 12 percent of the total variability. The first factor consisted of female pictures from nearly all ethnic groups whose dress tended to be ordinary. Male pictures with physical disabilities constituted the second factor. A third factor consisted primarily of male pictures who were fat and mentally disabled. The fourth factor seemed to consist of pictures from the black ethnic group.

These results appear to support the contention for the relative importance of the ethnic grouping, physical disability and learning ability dimensions. The apparent strength of the sex dimension was not expected. In summary, the apparent agreement between the factor analyses results and the anticipated findings suggest the instrument possesses at least some degree of content validity. It is understood, however, that the issue of validity definitely needs to be further researched.

DISCUSSION

The results of the pre- and post-testing for the 1974-75 school year indicate it is possible to measure the effect of a program of individual differences using the individual differences instrument. Thus, it was possible to successfully assess the attitudes of young children at the kindergarten, first, and second grade levels.

It has been stated that the focus of this study is not to assess the effectiveness of the individual differences program. This topic will be researched in a paper presented in the Spring of 1976. In presenting the results, however, we feel an obligation to briefly summarize them. The findings suggest that the program has had a fairly substantial impact for students in the first and second grades. The students appeared to demonstrate positive attitudes toward individual differences. Continued involvement of both teachers and students appears to result in more positive attitudes with respect to individual differences. The higher kindergarten results indicate the pre-test mean scores are higher than the corresponding post-test scores. The higher pre-mean score may be due in part to the partial exposure of young students into a novel setting. Efforts are presently underway exploring possible explanations for this occurrence. These kindergarten results do not necessarily suggest the program has not been effective, however.

With the exception of the kindergarten results, post-test mean scores were higher for those students involved in the program than for those students not involved. All pre- and post-testing mean scores were

significantly different at the 1 percent level as shown by applying Student's t statistic. This significance may be due to the large samples being considered, however.

The instrument appears to be quite reliable for assessing differing classrooms of students at the elementary level. The reliability coefficient ranges from .90 to .95. The reliability coefficient for subtests ranged between .70 and .75.

The results of the factor analysis indicate the instrument possesses some degree of content validity. Developmental efforts are underway for further exploring the issue of validity. Particularly of interest, is the area of empirical or predictive validity. Plans are to administer a reliable and valid instrument with similar scope such as the instrument mentioned earlier by Hahn and Schwartz (1971). In this way a degree of association indicating empirical validity can be ascertained.

Additional instrument development is being conducted which focuses on the sets of pictures presented for each question. The thrust of this investigation is to see how the children view the stimuli presented to them for each set of pictures. This information is being gathered by an interview process whereby selected groups of students give their perceptions of each set of pictures as they are presented each question. It is hoped this investigation will yield useful information for both improving the discriminating nature of the pictures and offering some idea as to the face validity of the instrument.

In summary, the results of this paper suggest it is possible for an educational institution to respond to the needs of society manifested at the community level. Identifying the need for an increased understanding of human behavior, it was necessary to develop an instrument for assessing attitudes regarding human behavior in young children. A reliable instrument was developed to measure attitudes toward individual differences in young children. The instrument appears to possess at least some degree of content validity as evidenced by the results of a factor analysis. Most importantly, the instrument has been successfully used to assess the effect of a program of individual differences in a public school setting.

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